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ABSTRACT

In an attempt to identify criteria used by readers to select science news, a homogeneous group of women in the Philadelphia area was asked to indicate which of 48 science-news statements they would be interested in reading in their newspapers. The statements were condensed from stories selected from Philadelphia newspapers over a six-and-a-half-month period. Each statement contained a combination of two factors: content in one of four categories (biomedicine/health and disease, biomedicine/policy, physical sciences/research and application, and physical sciences/policy) and emphasis on one of four content-free categories (conflict, impact, prominence, and proximity). A total of 200 questionnaires was mailed, of which 128 were returned in usable form. Factor analysis of responses indicated that respondents based their preferences for newspaper science news primarily on content, with content-free criteria apparently serving as secondary bases for selection. Such results suggest that reader preferences for news are probably based on complex mixtures of criteria rather than on just content or content-free components, as some earlier studies suggest. (Author/JM)

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CRITERIA UTILIZED

BY COLLEGE-EDUCATED WOMEN

TO SELECT NEWSPAPER SCIENCE NEWS

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Newspaper communication can be successful only when persons read what has been written.

Optimally, then, both writers and readers should judge news similarly. But do they? Do journalists and readers utilize similar criteria in deciding, on the one hand, what will be printed and, on the other, what will be read? And even more basically, what criteria are being used?

Answers to such questions become particularly important to journalists involved in specialized information areas like science, a field in which, many argue, communication to the general public has become critically necessary. As Funkhouser and Maccoby note:

> Our everyday roles as voter and consumer often involve technologies about which we know next to nothing. And more than ever before, administrators in government, education and industry are being required to make decisions based on scientific knowledge with which they may have relatively little familiarity. Just as war is too important to be left to the generals, perhaps science is too important to be left entirely to the specialists.[1]

The problem of how to communicate science information successfully may also be most salient for the print media since Swinehart and McLeod and Wade and Schramm, among others, have found newspapers and magazines to be the most preferred sources of science news for the public.[2]

Gatekeeper studies by Keirstead, Ward, Buckalew, Clyde

and Buckalew, Carter, and Rhoades indicate that editors and reporters utilize similar news criteria and thus tend to select the same kinds of information for dissemination. The criteria being examined in these and other studies has been termed "content-free,"[3] and investigators generally found that criteria like impact, conflict, oddity, timeliness, prominence and proximity were considered important by both editors and reporters.[4]

Readership studies of news preferences, on the other hand, have taken several different paths (analyses of general content selection patterns, uses and gratifications research, for examples) in attempts to define both what people read and why they select it. A few recent studies, however, have attempted to evaluate reader selections of news using content-free criteria similar to those used to study selection patterns of newsmen.

Bornholdt and Stempel, utilizing some content-free criteria in their studies, both concluded that audiences classify general news in a manner different from the newsman. Bornholdt found that violence (conflict) influenced readers' selection patterns while Stempel isolated a conflict-suspense factor, among others.[5]

Atwood, on the other hand, found in a factor analysis of story preferences by both newsmen and newspaper subscribers

that editor and reader selection patterns were relatively homogeneous with all respondents rating impact and conflict as the most preferred news elements.[6]

Content-free categories also were utilized by Atwood and Wright in a study of 109 residents of a tri-city area. The investigators found that once again respondents seemed more likely to read stories containing impact and conflict.[7]

Examination of similar content-free categories in science news has been done to a limited extent by Johnson and Lassahn. Johnson found that scientists, science writers and readers rated accuracy and impact high in science stories while editors seemed to prefer color and excitement.[8] Lassahn, in a study of preferences for agricultural science news items, found that editors could predict reader preferences well and that economic value (a criterion similar to impact) was the story element most valued by readers, in this case farmers.[9]

The research presented here is an exploratory attempt to incorporate two types of news criteria--content and content-free--into a study of college-educated women's preferences for science news. If, as many gatekeeper studies indicate, journalists are using content-free criteria to evaluate news, this investigation should help establish

whether similar criteria are being utilized by readers as well. In earlier studies mentioned above, readers did seem to utilize such criteria to evaluate general news content. This study will go one step further by offering content itself as a criterion and then examining selection patterns to see if either or both kinds of criteria play a part.

Method

The main question in this study is: Do college-educated women utilize content criteria, content-free criteria or both in selecting the kinds of science news stories they read in newspapers?

To answer the question a sample of college-educated women in the Philadelphia area was asked which of 48 science news statements (condensed from actual stories) they would be interested in reading. Responses to the statements were factor analyzed and the resulting clusters of statements examined for underlying factors that could be linked to the presence of either the content or content-free categories.

Four content and four content-free categories were chosen for incorporation into the science news statements. The content categories were Biomedicine/health and disease, Biomedicine/policy, Physical sciences/research and application and Physical sciences/policy. The content-free categories

were conflict, impact, prominence and proximity.[10]

The science news statements were condensed from stories chosen from among all science stories printed during a six and a half month period (Nov. 1, 1973-May 15, 1974) in daily and Sunday issues of The Philadelphia Inquirer, The Evening Bulletin, and The Sunday Bulletin.

Only those stories were selected from the total story pool which contained combinations of the four content and four content-free categories. These stories were then reduced to one-sentence statements, each statement containing one content category and one content-free category. References to time and other variables were deleted and the statements were written in simple subject-verb formats to minimize style differences.

After validation by an outside panel of three persons, the final 48 statements, containing the mix of categories illustrated in Figure 1, were incorporated in random order in a questionnaire.

FIGURE 1 ABOUT HERE

Since factor analysis was to be used for this exploratory study, hypotheses postulated the existence of "groups" of science news statements, each group dominated

by some major factor that could account for that group's variance within the total study and thus help explain gross selection patterns.

Studies by Bogart and by Patterson, Booth and Smith, among others, have found that newspaper readers seem more attracted to science stories relating specifically to man and his health[11] and Wade and Schramm found that women are more likely to read about health than men.[12]

As mentioned above, a number of studies have identified several content-free criteria as strong selection categories for both journalists and readers. Conflict and impact seem to be used most frequently while prominence and proximity seem to have an effect on selection patterns in some studies but not in others.[13]

Based upon these findings, the following hypotheses were proposed:

H1) The 12 statements relating to <u>biomedicine/health and disease</u>, regardless of content-free elements, will cluster together.

H2) The nine statements relating to <u>conflict</u> (not including those dealing with biomedicine/health and disease) will cluster together.

H3) The nine statements relating to <u>impact</u> (not including those dealing with biomedicine/health and disease)

will cluster together.

H4) The nine statements relating to prominence (not including those dealing with biomedicine/health and disease) will cluster together.

H5) The nine statements relating to proximity (not including those dealing with biomedicine/health and disease) will cluster together.

Since the aim of the study was to examine differences in selection patterns that might be based on variations in story content, it was important to obtain a sample that was relatively homogeneous in order to eliminate possible variation in selection that could be due to education differences or to other demographic variables.

Thus the universe chosen was the Barnard College Club of Philadelphia. A college-educated group was selected because studies by Schramm and White, Swinehart and McLeod, Samuelson, Carter and Ruggels, Bogart, and Wade and Schramm have indicated that education is a strong predictor of awareness of and exposure to media information, in science as well as in other areas.[14]

Cattell recommends a ratio of at least 2.5 persons per test item for the most effective factor analysis process.[15] Since the questionnaire contained 48 science news items, a minimum of 120 respondents was required. For this study,

then, 200 Barnard graduates were randomly chosen from the 339-person mailing list for inclusion. They were sent questionnaires in a first mailing and in two follow-up mailings.

Respondents were asked to read each of the 48 statements and indicate whether or not they would be interested in reading such an item in their newspapers by circling either "yes" or "no." The dichotomous responses were then factor analyzed, using principal component analysis and varimax rotation.

A total of 128 usable questionnaires was returned for a response rate of 64 per cent. Respondents had been asked for demographic information, and oneway analysis of variance was used to test for any significant differences in responses that could be related to demographic variables. There were few, so the sample was assumed to be a relatively homogeneous one.[16]

Women in the sample were relatively young, with a mean age of 40 and a median age of about 35. More than 75 per cent of the sample was 48 years of age or younger.

Highest degrees earned included the bachelor's, 44.5 per cent; the master's, 35.9 per cent; the Ph.D., 12.5 per cent, the law degree, 3.9 per cent, and the M.D., 3.1 per cent.

Approximately a third of the sample (33.6 per cent) had majored in a science field as undergraduates,[17] and of the 73 respondents who indicated they had earned some type of graduate degree, 31.5 per cent had majored in a science area.

Questions about reading habits revealed that respondents either subscribed to or regularly read an average of 2.22 newspapers and 3.39 popular magazines.

Respondents indicated general interest in science news by ranking both medical and nonmedical science news with 10 other types of news according to their personal reading preferences. They were asked to rank the news types from "1" (most interesting) to "12" (least interesting). As Table 1 shows, medicine ranks third and science (nonmedical science stories) ranks fourth, both behind politics and editorials but well above such news categories as crime and society.

TABLE 1 ABOUT HERE

Results

Factor analysis was chosen for the study because, according to Cattell, the technique provides a useful means for determining the number and nature of underlying constructs among large numbers of measures.[18] R factor analysis was

used since it involves the correlating and factoring of tests for a sample of persons.

A scree test, recommended by Cattell for determining the number of final factors, indicated that a three-factor solution was the most appropriate one.[19] The resulting three factors accounted for 31.5 per cent of the total variance. Only statements with positive factor loadings of .300 or higher were interpreted.

Forty-four statements were interpretable. They are listed by factor, from highest to lowest loading per factor, in Table 2. Four of the statements did not load highly enough on any factor to be interpreted. Seven of the items were factorially complex, in that they had loadings of .300 or higher on more than one factor.

TABLE 2 ABOUT HERE

Of the five hypotheses developed, none was supported. The groupings of science statements in the three factors indicated that respondents had made their selections primarily on the basis of content rather than content-free categories.

Factor 1. Of the 19 statements in Factor 1, all but one of them deal with medicine. The factor accounts for 14.5 per cent of the total variance and 47.9 per cent of

the variance accounted for by the three rotated factors alone. None of the statements is factorially complex.

The contaminant in the medicine factor is Item 19 (statements are numbered in Table 2), a statement about the dedication of a new chemistry building. As shown in Table 2, it has the lowest loading (.315) of all the statements in this factor. It is the only policy item linked to chemistry in the study and perhaps people link medicine and chemistry to some extent.

Eleven of the 12 statements containing the biomedicine/health and disease category (Items 02, 03, 04, 05, 07, 08, 09, 10, 13, 14, and 16) loaded highest on this factor, regardless of content-free categories. The twelfth health and disease statement (Item 29) was located in Factor 2.

The remaining eight items in Factor 1 include the contaminant and seven biomedicine/policy items (Items 01, 06, 11, 12, 15, 17, and 18). The seven represent more than half of the 12 biomedicine/policy items in the study.

Factor 2. Physical science statements, particularly those concerned with research findings about space, comprise this factor. The factor accounts for 11.1 per cent of the total variance and 35.3 per cent of the variance for the three rotated factors alone. Of the 13 statements, three

(Items 27, 31, and 32) are factorially complex.

Twelve of the 13 statements deal directly with physical science topics (Items 20, 21, 22, 23, 24, 25, 26, 27, 28, 30, 31, and 32). Of the 12 statements, 10 involve "space" topics, including astronomical research and agencies such as NASA that deal in space technology. The remaining two physical science items discuss three-dimensional holography (Item 23) and nuclear bomb making (Item 32).

Contaminating this factor is a story about the effects of defoliants on the health of mountain tribes in Vietnam (Item 29). The statement has a loading of .368 in Factor 2, the second lowest loading of all statements in the factor. Since the chemical defoliant item emphasizes military claims, it is possible that respondents saw it more as a technology story than a medical one.

Three items were factorially complex. Statements about a decision to power the Space Shuttle with solid-propellant rocket motors (Item 27) and about NASA's birthday (Item 31) also had loadings of .361 and .315 respectively on Factor 3. Since Factor 3 has been identified as a "public policy" factor, the loadings appear explainable since the Space Shuttle and NASA are government-related topics.

The third factorially complex statement, discussing

the ease of making a nuclear bomb (Item 32) has a loading of .307 on Factor 1. There is no apparent reason for its loading on the medical factor.

Of the 12 physical science/research and application statements, nine have their highest loadings in this factor (Items 20, 21, 22, 23, 24, 25, 26, 28, and 30) while the remaining three (Items 41, 42, and 43) are in Factor 3.

Only three of the physical sciences/policy statements (Items 27, 31, and 32) are located in this factor. Of the remaining nine statements in this category, one (Item 19) is in Factor 1 and the rest are found in Factor 3.

Factor 3. This last group of 12 science news statements has been labeled science public policy because nine statements (Items 33, 34, 35, 36, 37, 38, 39, 40, and 44) deal with such matters as federal energy programs and government health policies. The factor accounts for 6 per cent of the total variance and 16.8 per cent of the variance in the three factors. Four of the statements (Items 37, 40, 41, and 44) are factorially complex.

In addition to the nine science policy items, the factor includes three (Items 41, 42, and 43) that discuss, respectively, weather satellites, fusion research and a means of using solar heat to both heat and air condition homes.

Four of the statements are factorially complex. A statement about state funding of local medical schools (Item 37) had a loading of .302 in Factor 1. Since Factor 1 is the medical factor, this is understandable. The other three statements (Items 40, 41, and 42) had loadings of .352, .354 and .319 respectively in Factor 2. Once again this is understandable since Factor 2 is the physics factor and the items dealt with Nobel Prize winners for miniature electronics research, weather satellites and the military use of lasers.

Measures of interest. To ascertain how interested respondents were in the content areas isolated by the three factors, interest proportions were computed for each factor.

To calculate the proportion for Factor 1, for example, the total number of possible "yes" responses by all 128 respondents to all 19 items in the factor (2432) was divided into the actual number of "yes" responses by all respondents to all 19 items in the factor (1735). The resulting proportion was .713.

Because a score of 1 represented interest and a score of 0 did not, it is evident that the higher the proportion, the greater the interest.

As indicated in Table 3, the proportion calculated

for Factor 1 is higher than those obtained for Factors 2 and 3. Table 4 shows the proportion of "yes" responses by item in each factor. In only eight of the 44 items is the proportion of "yes" responses lower than .500.

TABLES 3 AND 4 ABOUT HERE

Conclusions

It is apparent in this study that respondents based their selections of science news statements on content rather than content-free criteria.

In this case respondents seemed generally interested in all science stories but based story preferences on whether the story content was medicine, the physical sciences or science policy. Medicine stories were most preferred, followed by public policy stories and finally physical science stories.

While content-free categories may indeed be strong predictors of newsman and audience news selections, this study indicates that content cannot realistically be ignored either by researchers or by working journalists. Earlier studies of news preferences seem to have eliminated or ignored content as a possible criterion; when introduced here it becomes the main source of variation in selection patterns.

Were the content-free criteria considered at all by respondents in the study? Table 5 offers a breakdown of content and content-free components for each item by factor.

TABLE 5 ABOUT HERE

The table shows that, while all content-free categories are present in nearly all factors (Factor 2 does not have any statements containing impact), they do seem to form vague groupings within factors. Such groupings could indicate that selections of news indeed are being based on some mixture of content and content-free criteria.

This study, however, is not capable of addressing that problem, but further research into such possible criterion interaction would enable both researchers and working journalists to develop and work from more realistic news criteria bases in the future.

As it stands, however, this study does indicate that college-educated women seem to base their preferences for science news on content rather than content-free criteria. If, as earlier gatekeeper studies indicate, journalists are utilizing mainly content-free criteria, then both writers and readers may <u>not</u> be answering the question "What's news?" similarly.

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[1]G. Ray Funkhouser and Nathan Maccoby, "Communicating Science to Nonscientists, Phase I; A Correlational Study of Textual Variables and Audience Effects" (Stanford University: Institute for Communication Research, 1970), pp. 4-5.

[2]James W. Swinehart and Jack M. McLeod, "News About Science: Channels, Audiences and Effects," Public Opinion Quarterly, 24:583-589, Winter 1960, p. 586; Serena Wade and Wilbur Schramm, "The Mass Media as Sources of Public Affairs, Science, and Health Knowledge," Public Opinion Quarterly, 33:197-209, Summer 1969, p. 201.

[3]Content-free categories are those which can be identified across stories regardless of the stories' general themes. Content categories, on the other hand, are those based on general theme or story type. For example, two articles, one each on medicine and education, would fall into different content categories but might have in common such content-free elements as timeliness and prominence.

[4]Phillip O. Keirstead, "The Differences in Selection of News Items for Telecasting by Television Newscast Staff Members and a Sample of the General Public" (unpublished Master's thesis, University of Iowa, 1966), Journalism Abstracts, 4:93, 1966;Walter J. Ward, "News Values, News Situations and News Selections: An Intensive Study of Ten City Editors" (unpublished Doctor's dissertation, The University of Iowa, 1967);James K. Buckalew, "News Elements and Selection by Television News Editors," Journal of Broadcasting, 14:47-53, Winter 1969-1970; Robert W. Clyde and James K. Buckalew, "Inter-Media Standardization: A Q-Analysis of News Editors," Journalism Quarterly, 46:349-351, Summer 1969; Lorenzo E. Carter, "News Values of Editors-Reporters on Five Oklahoma Newspapers" (unpublished Master's thesis, Oklahoma State University, 1970); George R. Rhoades, "News Values and News Decisions of Selected Associated Press and United Press International Newsmen in Oklahoma" (unpublished Master's thesis, Oklahoma State University, 1971).

[5]John N. Bornholdt Jr., "Should the Student Press Be More Serious?" Journalism Quarterly, 43:560-562, Autumn 1966; Guido Stempel, III, "A Factor Analytic Study of Reader Interest in News," Journalism Quarterly, 44:326-330, Summer 1967.

[6]L. Erwin Atwood, "How Newsmen and Readers Perceive Each Others' Story Preferences," Journalism Quarterly, 47:296-302, Summer 1970.

[7]L. Erwin Atwood and W. Russell Wright, "Content-Free News Categories, Audience Characteristics and Patterns of News Story Rejection" (paper read at the Association for Education in Journalism convention, Washington, D.C., August, 1970).

[8]Kenneth G. Johnson, "Dimensions of Judgment of Science News Stories," Journalism Quarterly, 40:315-322, Summer 1963.

[9]Pamela Henry Lassahn, "Comparison of Judgments About Agricultural Science News," Journalism Quarterly, 44:702-707, Winter 1967.

[10]"Science" was divided generally into medicine/non-medicine to create the content categories since in past studies science news traditionally has been so divided. Within the two general categories, "research" and "policy" subcategories then were created. The content categories were defined as follows:

Biomedicine/health and disease: Stories must deal with research and the application of such research (usually through treatment) to promote the physical and mental well-being of man. Included could be material about disease and injury as well as attempts to more clearly define biological man through research. Stories must deal primarily with research procedures or medical treatment, not with the proximate cause of injury, "human interest" stories about the handicapped, etc. Non-human biology was excluded.

Biomedicine/policy: Stories must discuss aspects of health other than biological research procedures or patient-oriented treatment of disease. Topics could include hospital management and organization, training of doctors or other medical or paramedical personnel, public health standards and goals, economic aspects of health care such as insurance or major research funding, political implications of policy, and medical philosophy and ethics.

Physical sciences/research and application: Stories must be concerned with the investigation of scientific laws dealing primarily with nonliving matter or energy and their practical applications. Such stories could be about astronomical phenomena, meteorology, rocketry, chemistry, mathematics, and physics but not about geology or other earth and marine sciences.

Physical sciences/policy: Stories must deal with programs and procedures controlling research in the physical sciences and their applications to man and his world. Articles could emphasize organization concepts, related physical structures, economic or political aspects, or ethics within these fields.

Definitions for the content-free categories are modifications of some of those provided by L. Erwin Atwood and W. Russell Wright, op. cit. Their definitions in turn were taken from a number of earlier studies and, in the opinion of the investigator, represent a synthesis of past material used.

Conflict: An explicit verbal, ideological or physical clash between or among persons, groups, animals, machines, or institutions or a clash against nature.

Impact: An event which has or could logically be perceived by respondents as having a physical, psychological or economic effect on a large number (at least 200,000 persons) of persons in an eight-county Philadelphia area.

Prominence: The presence in a news story of any person, group, institution, event or concept which has gained fame or notoriety through past actions and which would be quickly recognized by a large number of persons in the Philadelphia area. To avoid confusion with proximity, the prominent element must not be located in the Philadelphia area.

Proximity: Nearness. Stories about events, institutions or people in the Philadelphia area were considered proximate.

While all content-free studies noted above found conflict and impact to be strong selection categories, prominence was found to be a relatively weak category by Keirstead, op. cit., Clyde and Buckalew, op. cit., and Atwood, op. cit. Keirstead also found proximity to be a weak category.

[11]Leo Bogart, "Changing News Interests and the News Media," Public Opinion Quarterly, 32:560-574, Winter 1968-1969, p. 564; Joye Patterson, Laurel Booth and Russell Smith, "Who Reads about Science News?" Journalism Quarterly, 46:599-602, Autumn 1969, p. 601.

[12]Wade and Schramm, op. cit., p. 203.

[13]See discussion of content-free categories in Footnote 10.

[14]Wilbur Schramm and David M. White, "Age, Education, Economic Status: Factors in Newspaper Reading," Journalism Quarterly, 26:149-159, June, 1949; Swinehart and McLeod, op. cit., p. 589; Merill Samuelson, Richard F. Carter and Lee Ruggels, "Education, Available Time, and Use of the Mass Media," Journalism Quarterly, 40:491-496, Autumn 1963; Bogart, op. cit., p. 562; Wade and Schramm, op. cit., p. 206.

[15]Raymond B. Cattell, Handbook of Multivariate Experimental Psychology (Chicago: Rand McNally, 1966), p. 237.

[16]Of 30 demographic hypotheses constructed to test for significant differences in responses that could be attributed to age, education, etc., only five yielded differences significant at the .05 level. Data are available from the author.

[17]"Science field" in this analysis was defined as all natural and physical sciences and psychology; other social sciences were excluded since science items in the study did not include social science areas.

[18]Cattell, op. cit., p. 174.

[19]Ibid., p. 206.

Figure 1

Four-by-Four Matrix of Content and Content-Free Science News Categories in Science News Statements

	Conflict	Impact	Prominence	Proximity
Biomedicine/ Health & Disease	3	3	3	3
Biomedicine/ Policy	3	3	3	3
Physical sciences/ Research & Application	3	3	3	3
Physical sciences/ Policy	3	3	3	3

Table 1

RANK-ORDERING GENERAL NEWS CONTENT PREFERENCES

News content	N	Mean rankings (on a scale of 1-12)
Politics	124	3.51
Editorials	124	3.73
Medicine	125	4.41
Science	123	5.92
Movie reviews	123	5.95
Food	124	5.98
Music reviews	123	6.68
Business & finance	124	7.48
Religion	124	7.49
Crime	121	7.50
Society	122	8.61
Sports	121	9.98

Note: Respondents were asked to rank the news types from "1" (most interesting) to "12" (least interesting).

Table 2

THREE-FACTOR SOLUTION

Variable by factor	Description	h^2	Rotated factors		
			Factor 1	Factor 2	Factor 3
Factor 1					
01	New medical center scheduled to open in North Philadelphia.	.397	.586	-.118	.200
02	Studies show that underarm anti-perspirants may cause inflammation of the lungs.	.336	.556	.110	-.119
03	Use of artificial roots to strengthen teeth may eliminate need for false teeth.	.256	.501	.040	-.058
04	Philadelphia hospital opens clinic devoted to treatment of long-term pain.	.250	.489	.098	-.039
05	Sen. Hubert Humphrey discusses treatment of possible cancer of the bladder.	.245	.488	-.086	.006
06	Pharmacists required to put drugs in child-proof containers to reduce accidental poisoning.	.263	.467	-.040	.209

Table 2 continued

Variable by factor	Description	h^2	Rotated factors Factor 1	Factor 2	Factor 3
Factor 1, continued					
07	Psychiatrist reveals that six patients are under treatment after seeing "The Exorcist."	.227	.461	-.054	-.103
08	Temple University doctor devises very successful treatment for stuttering.	.209	.456	-.029	-.021
09	Dr. Linus Pauling says he takes massive doses of vitamin C daily.	.207	.448	.072	.019
10	Although commonplace, preventive heart surgery remains a controversial treatment method.	.256	.446	-.090	.221
11	Gabon government plans to renovate Dr. Albert Schweitzer's hospital.	.241	.417	.153	.209
12	Mississippi mother charges that hospital's refusal to treat the poor and black has caused death of her daughter	.191	.417	-.035	.126
13	New IUD described as 99 per cent effective.	.170	.407	-.060	.029

Table 2 continued

Variable by factor	Description	h^2	Rotated factors		
			Factor 1	Factor 2	Factor 3
Factor 1, continued					
14	Local doctor maintains clinical trials help scientists understand disease processes.	.214	.387	.049	.248
15	Philadelphia nurses to promote state nursing bill in Harrisburg.	.247	.385	-.136	.283
16	Doctors report that, contrary to past claims, smoking marijuana may be unhealthy.	.154	.381	-.026	.093
17	State hospital inmates are being used for medical experiments despite a ban on such tests.	.183	.377	-.154	.132
18	As patents on drugs expire, discount drug stores can offer generic brands at cheaper prices.	.112	.324	.085	.002
19	New chemistry building is dedicated in West Philadelphia.	.127	.315	.072	.148

Table 2 continued

Variable by factor	Description	h^2	Rotated factors		
			Factor 1	Factor 2	Factor 3
Factor 2					
20	Local astronomer announces discovery of planet-like object circling a star.	.568	-.189	.729	-.007
21	Local scientists have developed method of detecting anti-matter in space.	.420	-.099	.638	.050
22	Albert Einstein's prediction of the existence of "black holes" in space has been verified.	.409	-.142	.622	-.034
23	Isaac Asimov explains the difference between three-dimensional holography and two-dimensional photography.	.339	.056	.573	.091
24	New findings about dust in space force astronomers to abandon old theories.	.372	-.196	.557	.153
25	Two physics students describe their design of a spaceship at a Philadelphia meeting.	.363	.139	.547	.211
26	An unmanned space probe has described the atmosphere of Venus.	.361	-.117	.546	.224

Table 2 continued

Variable by factor	Description	h^2	Rotated factors		
			Factor 1	Factor 2	Factor 3
Factor 2, continued					
27	Decision to use solid-propellant rocket motors in Space Shuttle makes it probable that Cape Kennedy will be the launch site.	.417	.192	.500	.361
28	Immanuel Velikovsky invited to debate his controversial theory of the history of the universe.	.207	.044	.433	.134
29	Researchers dispute military claims that its chemical defoliants did not affect people in Vietnam.	.162	.113	.368	.120
30	Astronomer argues that man must make a serious attempt to contact life on other planets.	.190	.263	.331	-.108
31	NASA celebrates its 15th birthday.	.238	.187	.323	.315
32	Physicist charges that lax security procedures enable anyone to steal enough nuclear materials to make a bomb.	.249	.307	.310	.242

Table 2 continued

Variable by factor	Description	h^2	Rotated factors		
			Factor 1	Factor 2	Factor 3
Factor 3					
33	House Subcommittee opens hearings on bill to perfect use of solar energy for homes.	.418	-.038	.116	.635
34	Senate prepares bill to create new energy agency.	.435	-.046	.263	.603
35	Creation of a tri-state energy research area around Philadelphia proposed.	.334	.018	.116	.566
36	Nixon signs legislation authorizing research and development of emergency medical services.	.383	.274	.024	.555
37	Four local medical schools may receive millions in state funding.	.379	.302	-.077	.532
38	Federal officials propose national health insurance plan that would require no new taxes.	.329	.115	-.206	.523
39	Federal government's attempt to force state acceptance of nuclear power plants opposed.	.265	.012	.109	.503
40	Three scientists win the Nobel Prize for their work in miniature electronics.	.353	.110	.352	.466

Table 2 continued

Variable by factor	Description	h^2	Rotated factors Factor 1	Factor 2	Factor 3
Factor 3, continued					
41	U.S. firm unveils satellites designed to help man understand the weather.	.330	.049	.354	.450
42	Scientists throughout the world are working to create fusion.	.312	-.239	.263	.431
43	Researchers have found a way to use solar heat to both heat and air condition homes.	.220	-.081	.272	.374
44	Scientists chargethe military use of lasers could upset the arms balance between the U.S. and Russia.	.253	.120	.319	.370

The four statements which did not have any loadings as high as .300 were:
*United States begins switching its measurements to the metric system.
*Oregon businessman to receive award from the Franklin Institute in Philadelphia.
*Sen. Edward Kennedy predicts passage of health insurance legislation by end of 1974.
*Maine surgeons go to court to challenge parents' decision to let severely malformed infant die.

Statements in this table are abbreviated versions of the originals. The actual questionnaire is available upon request.

Table 3

"YES" PROPORTIONS FOR
THREE FACTORS

	Factor	Interest Proportion
1	(Medicine)	.713
2	(Physical sciences)	.557
3	(Science public policy)	.619

Table 4

PROPORTION OF "YES" RESPONSES
TO EACH SCIENCE STATEMENT
AS A MEASURE OF INTEREST

Item by Factor	N	Proportion of "Yes" Responses
Factor 1		
1	128	.500
2	128	.820
3	128	.898
4	128	.820
5	128	.625
6	128	.609
7	128	.695
8	128	.828
9	128	.719
10	128	.742
11	127	.480
12	128	.891
13	128	.875
14	128	.656
15	128	.563
16	127	.874
17	127	.913
18	127	.906
19	128	.164
Factor 2		
20	128	.727
21	128	.609
22	128	.773
23	128	.461
24	128	.609
25	128	.219
26	128	.547
27	127	.189
28	128	.539
29	128	.828
30	128	.820
31	128	.258
32	128	.664

Table 4 continued

Item by Factor	N	Proportion of "Yes" Responses
Factor 3		
33	127	.669
34	128	.625
35	128	.570
36	127	.654
37	128	.484
38	126	.786
39	127	.685
40	128	.258
41	128	.547
42	128	.828
43	127	.866
44	125	.504

Table 5

DISTRIBUTION OF CONTENT AND CONTENT-FREE CATEGORIES BY FACTOR

Variables by factor	Content				Content-free			
	Biomed. Health	Biomed. Policy	Phys. Sci. Research	Phys. Sci. Policy	Conflict	Impact	Promi-nence	Proxi-mity
Factor 1								
01		x						x
02	x					x		
03	x					x		
04	x							x
05	x						x	
06		x				x		
07	x						x	
08	x							x
09	x						x	
10	x				x			
11		x					x	
12		x			x			
13	x					x		
14	x							x
15		x						x
16	x				x			
17		x			x			
18		x				x		

Table 5 continued

Variables by factor	Content: Biomed. Health	Content: Biomed. Policy	Content: Phys. Sci. Research	Content: Phys. Sci. Policy	Content-free: Conflict	Content-free: Impact	Content-free: Prominence	Content-free: Proximity
Factor 1, continued								
19				x				x
Totals for Factor 1:	11	7	0	1	4	5	4	6
Factor 2								
20			x					x
21			x					x
22			x				x	
23			x				x	
24			x		x			
25			x					x
26			x				x	
27				x			x	
28			x		x			
29	x				x			
30			x		x			
31				x			x	
32				x	x			
Totals for Factor 2:	1	0	9	3	5	0	5	3

Table 5 continued

Variables by factor	Content: Biomed. Health	Content: Biomed. Policy	Content: Phys. Sci. Research	Content: Phys. Sci. Policy	Content-free: Conflict	Content-free: Impact	Content-free: Prominence	Content-free: Proximity
Factor 3								
33				x		x		
34				x		x		
35				x				x
36		x					x	
37		x						x
38		x				x		
39				x	x			
40				x			x	
41			x			x		
42			x			x		
43			x			x		
44				x	x			
Totals for Factor 3:	0	3	3	6	2	6	2	2

Variables are identified and described in Table 8.

The final total under each criterion category should be 12. This is not the case since four variables in the study did not load highly enough to be interpreted by factor; thus they are not listed here.